Remarks

I. Status of the Claims

Claims 46-52 and 54 are pending in the application, with claims 46-49 being the independent claims.

II. Summary of the Office Action

In the final Office Action dated January 14, 2005, the Examiner has made one apparent objection to, and one rejection of, the claims. Based on the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

III. The Apparent Objection to Nonelected Claims 47, 48 and 52 is Traversed

In the Office Action at page 2, the Examiner apparently objects to the claims, noting that claims 47, 48 and 52 are "drawn to an invention nonelected with traverse." The Examiner then contends that in order for a reply to the final Office Action to be complete, the reply "must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01." Applicants respectfully disagree with these contentions, and traverse the requirement for cancellation of these claims.

Contrary to the Examiner's apparent contention, the election made with traverse in Applicants' reply filed April 21, 2004, was in reply to an Election of Species Requirement issued by the Office on March 23, 2004. That action was *not* a Restriction Requirement, and claims 47, 48 and 52 were not deemed to be separately patentable inventions in separate restriction groups from the remaining claims. Indeed, these claims were not even mentioned *per se* in the Election of Species Requirement of March 23,

2004. Thus, the status of claims 47, 48 and 52 as "withdrawn from further consideration," first made in the Office Action dated July 9, 2004, was due to the Examiner's view that these claims did not encompass the subject matter of the species initially elected for examination in the present application; they were *not* restricted from the present application.

In contrast to those subject to a Restriction Requirement, claims that have been withdrawn from consideration due to an Election of Species Requirement need not be cancelled, and can be rejoined and examined with the remaining claims once an allowable generic or linking claim has been identified. *See* 37 C.F.R. §§ 1.141(a) and 1.146, and MPEP § 809.02(c)(B). This scenario is applicable to present claims 47, 48 and 52, which therefore need not be cancelled.

Applicants respectfully assert that generic claims 46 and 49, and dependent claim 51 (encompassing the elected species, aminoguanidine), are allowable in view of the remarks contained hereinbelow. Claim 52 is drawn to the use of 1,2-phenylenediamine, and depends ultimately from claims 46 and 49. Thus, claims 46 and 49 represent allowable generic claims that link claim 52 and the elected species recited in claim 51. Accordingly, it is respectfully asserted the Examiner's objection to, and requirement for cancellation of, claim 52 are in error; reconsideration and withdrawal therefore are respectfully requested. Applicants further respectfully request that claim 52 be rejoined and examined with the remaining claims, and that this claim be allowed. *See* 37 C.F.R. §§ 1.141(a) and 1.146, and MPEP § 809.02(c)(B).

Similarly, Applicants respectfully assert that generic claim 46 and dependent claim 49 (encompassing the elected species, beer or, more precisely, "fermented malt beverage;" *see* remarks in Reply filed April 21, 2004, at pages 2-3) are allowable, in

view of the remarks contained hereinbelow. Claims 47 and 48 are drawn to contacting the inhibiting agent with a malt (claim 47) or a wort (claim 48), and depend ultimately from claim 46. Thus, claim 46 represents an allowable generic claim that links claims 47 and 48 and the elected species recited in claim 49. Accordingly, it is respectfully asserted the Examiner's objection to, and requirement for cancellation of, claims 47 and 48 are in error; reconsideration and withdrawal therefore are respectfully requested. Applicants further respectfully request that claims 47 and 48 also be rejoined and examined with the remaining claims, and that these claims be allowed. *See* 37 C.F.R. §§ 1.141(a) and 1.146, and MPEP § 809.02(c)(B).

IV. The Rejection Under 35 U.S.C. § 112, First Paragraph Is Traversed

In the Office Action at pages 2-3, the Examiner has rejected claims 46, 49-51 and 54 under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement. Applicants respectfully traverse this rejection.

In making the rejection, the Examiner has maintained the contention that "[w]hile the specification discloses some of the claimed agents immobilized, it does not disclose aminoguanidine on a solid support." Office Action at page 2. This contention is simply incorrect.

As Applicants have previously noted, the present specification clearly discloses aminoguanidine immobilized on a solid support. Specifically, aminoguanidine is described in the present specification as one of the inhibitors, blockers, reducing agents and binding agents used in the presently claimed methods:

> The present invention is therefore directed to the stabilization of the flavor of a fermented malt beverage **using one or more inhibitors, blockers, reducing agents or binding agents that**

> **inactivate Maillard reaction intermediates; such agents may include, for example**, NADPH-dependent oxidoreductase enzymes or **chemical agents such as aminoguanidine**.

Specification at page 11, lines 24-28 (emphasis added). This disclosure is reinforced later in the specification:

> The invention therefore relates to methods for stabilizing the flavor of a fermented malt beverage, such as a beer, and to fermented malt beverages such as beers produced by such methods. The methods of the invention typically comprise **the use of one or more inhibitors, blockers, reducing agents or binding agents** to inhibit, block, reduce, bind or otherwise inactivate one or more Maillard reaction intermediates that are involved in causing staling of the flavor of fermented malt beverages. **The inhibitors, blockers, reducing agents and binding agents used in the present methods may be any agent, compound, composition, etc., that effectively inhibits, blocks, reduces, binds or otherwise inactivates one or more Maillard reaction intermediates** thereby stabilizing the flavor of a fermented malt beverage. **Such agents may include**, but are not limited to, enzymes (particularly reductase enzymes), enzyme complexes, cells (particularly yeast cells such as those of the *Saccharomyces* genus), enzyme-containing extracts or digests of cells, enzyme-cofactor complexes or **chemical agents such as aminoguanidine**. Particularly preferred are enzymes and chemical agents.

Specification at page 19, lines 1-15 (emphasis added). Thus, in reading the explicit disclosure provided by the present specification, there can be absolutely no question that one of ordinary skill would have readily concluded that aminoguanidine is a non-limiting example of a chemical agent that can be used as an effective "inhibitor, blocker, reducing agent [or] binding agent" of Maillard reaction intermediates in the presently claimed methods.

While acknowledging this express disclosure of aminoguanidine as an effective inhibitor, blocker, reducing agent or binding agent, the Examiner bases this rejection on

the contention that the present specification does not explicitly disclose aminoguanidine immobilized on a solid support. This contention is not only incorrect, it is irrelevant.

First, the Examiner is incorrect to contend that the present specification does not explicitly disclose aminoguanidine immobilized on a solid support. To the contrary, the specification makes it eminently clear that *any* of the "inhibitors, blockers, reducing agents or binding agents" described in the present specification can be immobilized on a solid support in order to carry out the presently claimed methods:

> Thus, **in another preferred aspect of the invention, one or more of the above-described inhibitors, blockers, reducing agents or binding agents**, such as one or more of the cells producing reductase enzymes, one or more of the extracts or enzymatic digests, or one or more of the purified reductase enzymes, **may be immobilized on a solid support to form an "active solid support."** These active solid supports may then be used in the present methods of stabilize the flavor of a fermented malt beverage. In the case of enzymes, extracts, digests or cells, these compounds may be immobilized on the solid support in conjunction with one or more enzyme cofactors, such as NADH or NADPH, to produce an enzyme-containing solid support.

Specification at page 23, lines 6-15 (emphasis added). This excerpt from the present specification thus explicitly teaches that **any** "of the **above-described** inhibitors, blockers, reducing agents or binding agents" can be immobilized onto a solid support. As noted above, aminoguanidine is explicitly described at least twice, prior to page 23 of the present specification, as an "inhibitor, blocker, reducing agent or binding agent" suitable for use in the presently claimed methods; indeed, the Examiner has acknowledged this explicit description. Thus, the phrase "above-described" appearing at page 23 of the present specification **must** be taken to refer to **any** of the "inhibitors, blockers, reducing agents or binding agents" described prior to page 23; this includes aminoguanidine, which therefore can be immobilized onto a solid support according to

the disclosure appearing at page 23 of the present specification. Accordingly, between pages 11-23, the present specification clearly and explicitly describes the immobilization of aminoguanidine onto a solid support for use in the presently claimed methods.

In ignoring the logic of this explicit teaching of immobilized aminoguanidine, the Examiner draws the illogical conclusion that the term "above-described" inhibitors, etc., appearing at page 23 of the specification, somehow refers only to a subset of all of the agents described throughout the specification. That is, the Examiner contends that the above excerpt from page 23 of the specification encompasses only the immobilization of reductase enzymes (*see* Office Action, bottom of page 2 to top of page 3). The Examiner then contends that "[i]t is not clear what the phrase 'the above-described' components encompasses," Office Action at page 3, and that [i]t would appear . . . that said phrase refers to the enzymes being immobilized." *Id.* Again, this contention defies logic. As noted above, the phrase "above-described" components as used at page 23 of the present specification clearly refers to those "inhibitors, blockers, reducing agents or binding agents" that are described **anywhere** in the specification prior to page 23. There is absolutely no reason to read this phrase as somehow limited to only a subset of such agents, *i.e.*, as including only enzymes but not including chemical agents such as aminoguanidine which are also explicitly described "above" (*i.e.*, prior to page 23 of the specification) as " inhibitors, blockers, reducing agents or binding agents." It is certainly correct that immobilized enzymes are one particular *embodiment* that can be used in the presently claimed methods. However, the claimed methods also clearly contemplate the use of *other* embodiments, such as immobilized chemical agents including aminoguanidine. If this were not the case, the specification would have explicitly stated that only enzymes (or their various forms) could be immobilized onto a solid support.

This language does not appear in the specification, which instead uses the broader description of the immobilization of **any** of the inhibitors, blockers, reducing agents or binding agents explicitly described in the specification, including aminoguanidine.

Therefore, the present specification clearly describes the immobilization of aminoguanidine on a solid support, and the Examiner's contention to the contrary is simply incorrect. However, even assuming *arguendo* that this contention was correct, it is nonetheless irrelevant to the question of whether or not the present specification fulfills the written description requirement in support of the present claims.

Applicants wish to remind the Examiner that "[a]dequate description under the first paragraph of 35 U.S.C. 112 does not require *literal* support for the claimed invention . . . . the observation of a lack of literal support does not, in and of itself, establish a *prima facie* case for lack of adequate descriptive support under the first paragraph of 35 U.S.C. 112." *Ex parte Parks*, 30 USPQ2d 1234, 1236 (Bd. Pat. App. Int. 1994). Instead, the written description requirement of 35 U.S.C. § 112, first paragraph, is met "if the originally-filed disclosure would have conveyed to one having ordinary skill in the art that an [applicant] had possession of the concept of what is claimed," *id.*, *i.e.*, "[i]f a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification . . . ." *In re Alton*, 37 USPQ2d 1578, 1584 (Fed. Cir. 1996). An Applicant is not required to disclose or provide a working example of every species of a given genus in order to meet the written description requirement of 35 U.S.C. § 112 (*see Parks* and *Alton*), and subject matter that "might fairly be deduced from the original application" is considered to be described in the application as filed. *Acme Highway Products Corp. v. D.S. Brown Co.*,

431 F.2d 1074, 1080 (6th Cir. 1970) (citations omitted), *cert. denied*, 401 U.S. 956 (1971), *followed by Westphal v. Fawzi*, 666 F.2d 575, 577 (C.C.P.A. 1981).

In the present case, the specification clearly discloses the use of aminoguanidine as one of the inhibitors, blockers, reducing agents or binding agents useful in the presently claimed methods. The specification also clearly discloses that **any** of the inhibitors, blockers, reducing agents or binding agents described in the specification can be immobilized onto a solid support for use in the presently claimed methods. The fact that a large part of the specification discloses the use of reductase enzymes (or their various forms) thus is irrelevant to the question of whether or not immobilized aminoguanidine is disclosed -- under *Parks* and *Alton*, Applicants are not required to provide a working example of immobilized aminoguanidine as the Examiner appears to be requiring. Moreover, throughout the present specification, the use of reductase enzymes (or their forms) are consistently described as *examples* or *particular* (but not limiting) *embodiments* of agents that are useful as inhibitors, blockers, reducing agents or binding agents (*see, e.g.*, Specification at page 11, lines 27-28; at page 13, line 19; at page 19, lines 11-15 and lines 16-18; and at page 24, lines 1-7). Limiting the scope of the description of the present specification to only these preferred embodiments, as the Examiner has done in the present rejection, is improper, particularly when the specification makes it clear that the invention is not so limited. *See Seachange Int'l., Inc. v. C-Cor Inc.*, 413 F.3d 1361, 1377 (Fed. Cir. 2005), *citing Fuji Photo Film Co. Ltd. V. Int'l. Trade Comm.*, 386 F.3d 1095, 1106 (Fed. Cir. 2004) (refusing to limit the written description in a patent to subject matter described as a preferred embodiment).

As noted above, the present specification describes a number of representative examples of inhibitors, blockers, reducing agents or binding agents that would be useful

in the presently claimed methods. The present specification also describes the immobilization of any of these inhibitors, blockers, reducing agents or binding agents onto a solid support for use in the presently claimed methods. It is of no moment that the specification does not provide a working example of immobilized aminoguanidine, since the specification clearly demonstrates that Applicants contemplated such an embodiment as of the filing date of the present application. Hence, one of ordinary skill clearly would have concluded that as of the filing date of the present application, Applicants had possession of methods using immobilized aminoguanidine, based on the explicit and implicit disclosure provided by the present specification. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, first paragraph, are respectfully requested.

V. Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Reply, and allowance of all pending claims, are earnestly solicited.

Respectfully submitted,

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